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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,845	02/05/2004	Jeffrey J. Allen	GP-303467	5763
7590 03/17/2005				
CHRISTOPHER DEVRIES General Motors Corporation Legal Staff, Mail Code 482-C23-B21 P.O. Box 300 Detroit, MI 48265-3000		EXAMINER ALI, HYDER		
		ART UNIT 3747 PAPER NUMBER		
DATE MAILED: 03/17/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

8N

Office Action Summary	Application No. 10/772,845	Applicant(s) ALLEN ET AL.	
	Examiner HYDER ALI	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-14 and 17-21 is/are rejected.
- 7) ☒ Claim(s) 8, 15, 16 and 22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Inventorship

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al (US 4,144,864).

As to Claims 1 and 5, Kato et al discloses engine load is compared with a reference threshold to determine when the engine load is relatively small in comparison with the engine speed. The reference threshold is variable as a function of the engine speed so that the threshold is low at low engine speed and increases therewith until it reaches a medium speed level. When the engine load is below the variable threshold

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with the engine running at low speed, fuel supply is cut off to part of the cylinders so that the engine runs on the rest of the cylinders. The internal combustion engine is provided with a load sensor 1 and an engine speed sensor 2. When the engine load is below the lower threshold level, an output is delivered from the respective comparator to a logic control circuit which disables a predetermined number of cylinders, and when the engine load lies between the high and low threshold level the working cylinders are maintained in the same condition as in the previous operational mode. When the engine load rises above the higher threshold level, the logic circuit switches the operational mode so that active cylinders are increased to give more power. See col. 1, lines 45-67 and col. 2, lines 1-10.

Claims 1-7,9-14 and 17-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Iizuka (US 4,107,921).

As to Claims 1-7,9-14 and 17-21, Iizuka discloses the cylinder cut-off program illustrated in FIG. 3 is dependent on the vehicle speed and the engine load, which is represented by the vacuum developed in the intake manifold of the engine. The program consists of a power-down range P, a balanced-power range Q next to the power-down range P along a first threshold curve $t_{sub.1}$ and a power-up range R next to the balanced-power range Q along a second threshold curve $t_{sub.2}$, wherein the ranges P, Q and R are higher in this sequence in terms of the intake manifold vacuum (in absolute values) throughout the range of the vehicle speed. When, in operation, the vehicle equipped with the fuel-injection internal combustion engine hereinbefore described with reference to FIG. 4 is being accelerated or is climbing up a hill so that

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the engine is subjected to an increased load, the cylinder cut-off control circuit 56 controls the fuel-injection system in such a manner as to enable the fuel injection nozzles 21, 22, 23 and 24 for both pairs of power cylinders 11, 12, 13 and 14 to deliver fuel into the intake ports of the cylinders during respective intake strokes of the individual power cylinders. Under these conditions, the throttle valves 35 and 36 and the fuel injection system are controlled by the signals produced by the air-fuel ratio control circuit 25 so that the air-fuel mixture produced in the individual power cylinders is regulated to have an air-to-fuel ratio within a predetermined range that will enable the catalytic converter 20 to exhibit its maximum conversion efficiency. When the load on the engine is thereafter diminished, then the cylinder cut-off control circuit 56 controls the fuel-injection system in such a manner as to cut off the delivery of fuel from the fuel injection nozzles 21 and 22 for one pair of power cylinders 11 and 12 or the fuel injection nozzles 23 and 24 for the other pair of power cylinders 13 and 14. If, in this instance, it is assumed that the first and second power cylinders 11 and 12 are brought into the inoperative conditions thereof with the third and fourth power cylinders 13 and 14 maintained in the operative conditions thereof.

Allowable Subject Matter

Claims 8,15,16 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The reference by Ueno et al (US 4,483,288) discloses first throttle 23 and second throttle 29 for split engine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HYDER ALI whose telephone number is (571) 272-4836. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HENRY YUEN can be reached on (571) 272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Henry C. Yuen
Supervisory Patent Examiner
Group 3700